WHAT IS CLAIMED IS:

1. An internal combustion engine comprising:

a fueling system for forcing fuel into engine combustion chambers where the fuel is combusted to power the engine;

an exhaust system through which exhaust gases generated by combustion of fuel in the combustion chambers pass from the engine;

an engine brake system that is associated with the exhaust system to brake the engine by controlling exhaust flow during engine braking and that comprises one or more hydraulic actuators that is or are actuated during braking of the engine by the engine brake system;

a hydraulic system for supplying hydraulic fluid under pressure both to the fueling system for forcing fuel into the combustion chambers and to the one or more actuators;

a control system for controlling various aspects of engine operation, including controlling braking of the engine by selectively communicating hydraulic fluid to the one or more actuators; and

a fuel injection control strategy in the control system for closed-loop control of injection control pressure to cause injection control pressure to correspond to an injection control pressure set by the fuel injection control strategy; and

a brake control pressure strategy in the control system for signaling hydraulic pressure supplied to the one or more actuators in excess of a pressure determined by the brake control pressure strategy and imposing limitation on injection control pressure when such excess pressure is signaled.

2. An engine as set forth in Claim 1 wherein the control system sets one data value for a parameter to render the brake control pressure strategy active and a different data value to render the brake control pressure strategy inactive, and when the data value for the parameter changes from the one data value to the different data value after hydraulic pressure supplied to the one or more actuators in excess of pressure determined by the brake control pressure strategy has been signaled, the brake control pressure strategy causes injection control pressure to be set by a function in the brake control pressure strategy instead of by the fuel injection control strategy.

3. An engine as set forth in Claim 2 wherein the function in the brake control pressure strategy that sets injection control pressure comprises data values for injection control pressure correlated with data values for engine speed, thereby causing injection control pressure to be a function of engine speed upon the data value for the parameter becoming the different data value after hydraulic pressure supplied to the one or more actuators in excess of pressure determined by the brake control pressure strategy has been signaled.

4. An engine as set forth in Claim 2 wherein the brake control pressure strategy comprises a latch function in the control system that becomes latched to signal hydraulic pressure supplied to the one or more actuators in excess of pressure determined by the brake control pressure strategy, and that remains latched as long as the engine continues running.

5. An engine as set forth in Claim 4 wherein the control system causes the latch function to become unlatched when the engine, after having stopped running, is again re-started.

6. An engine as set forth in Claim 1 wherein the control system comprises a minimum value selection function for selecting as a data value for injection control pressure, the smaller of: the data value for injection control pressure set by the fuel injection control strategy, and the data value for injection control pressure set by the brake control pressure strategy.

7. An engine as set forth in Claim 6 wherein the control system sets one data value for a parameter to render the brake control pressure strategy active and a different data value to render the brake control pressure strategy inactive, and when the data value for the parameter is the one data value, the injection control pressure set by the brake control pressure strategy is set by one portion of the brake control pressure strategy, and when the data value for the parameter is the different data value, the injection control pressure set by the brake control pressure strategy is set by another portion of the brake control pressure strategy.

8. An engine as set forth in Claim 7 wherein when the data value for the parameter changes from the one data value to the different data value after hydraulic pressure supplied to the one or more actuators in excess of a desired pressure has been signaled, the injection control pressure set by the brake control pressure strategy is obtained from a function in the brake control pressure strategy that comprises data values for injection control pressure correlated with data

values for engine speed, thereby causing injection control pressure to be a function of engine speed.

9. A control system for an internal combustion engine that has a fueling system for forcing fuel into engine combustion chambers where the fuel is combusted to power the engine, an exhaust system through which exhaust gases generated by combustion of fuel in the combustion chambers pass from the engine, an engine brake system that is associated with the exhaust system to brake the engine by controlling exhaust flow during engine braking and that comprises one or more hydraulic actuators that is or are actuated during braking of the engine by the engine brake system, and a hydraulic system for supplying hydraulic fluid under pressure both to the fueling system for forcing fuel into the combustion chambers and to the one or more actuators, the control system comprising:

a fuel injection control strategy for closed-loop control of injection control pressure to cause injection control pressure to correspond to an injection control pressure set by the fuel injection control strategy; and

a brake control pressure strategy for controlling braking of the engine by selectively communicating hydraulic fluid to the one or more actuators, for signaling hydraulic pressure supplied to the one or more actuators in excess of a pressure determined by the brake control pressure strategy, and for imposing limitation on injection control pressure when such excess pressure is signaled.

10. A control system as set forth in Claim 9 wherein the brake control pressure strategy, when active, is capable of braking the engine and when inactive, is incapable of braking the engine, and when the brake control pressure strategy switches from being active to being inactive, the brake control pressure strategy

causes injection control pressure to be set by a function in the brake control pressure strategy instead of by the fuel injection control strategy.

11. A control system as set forth in Claim 10 wherein the function in the brake control pressure strategy that sets injection control pressure comprises data values for injection control pressure correlated with data values for engine speed, thereby causing injection control pressure to be a function of engine speed upon the brake control pressure strategy switching from being active to being inactive.

12. A control system as set forth in Claim 10 wherein the brake control pressure strategy comprises a latch function that becomes latched to signal hydraulic pressure supplied to the one or more actuators in excess of pressure determined by the brake control pressure strategy, and that remains latched as long as the engine continues running.

13. A control system as set forth in Claim 12 wherein the latch function unlatches upon re-starting of the engine after having been stopped.

14. A control system as set forth in Claim 9 comprising a minimum value selection function for selecting as a data value for injection control pressure, the smaller of: the data value for injection control pressure set by the fuel injection control strategy, and the data value for injection control pressure set by the brake control pressure strategy.

15. A control system as set forth in Claim 14 wherein the brake control pressure strategy, when active, is capable of braking the engine and when inactive,

is incapable of braking the engine, and when the brake control pressure strategy switches from being active to being inactive, the control system sets one data value for a parameter to render the brake control pressure strategy active and a different data value to render the brake control pressure strategy inactive, and when the data value for the parameter is the one data value, the injection control pressure set by the brake control pressure strategy is set by one portion of the brake control pressure strategy, and when the data value for the parameter is the different data value, the injection control pressure set by the brake control pressure strategy is set by another portion of the brake control pressure strategy.

16. A control system as set forth in Claim 15 wherein when the data value for the parameter changes from the one data value to the different data value, the injection control pressure set by the brake control pressure strategy is obtained from a function in the brake control pressure strategy that comprises data values for injection control pressure correlated with data values for engine speed, thereby causing injection control pressure to be a function of engine speed.

17. A method for control of pressure of hydraulic fluid in a hydraulic system of an internal combustion engine that has a fueling system for forcing fuel into engine combustion chambers using the hydraulic fluid, an exhaust system through which exhaust gases generated by combustion of fuel in the combustion chambers pass from the engine, and an engine brake system that is associated with the exhaust system to brake the engine by controlling exhaust flow during engine braking and that comprises one or more hydraulic actuators that is or are actuated during braking of the engine by the engine brake system, wherein the hydraulic

system supplies hydraulic fluid both to the fueling system and to the one or more actuators, the method comprising:

setting pressure of the hydraulic fluid by an injection control strategy;

controlling braking of the engine by selectively communicating hydraulic fluid to the one or more actuators;

signaling hydraulic pressure supplied to the one or more actuators in excess of a pressure determined by a brake control pressure strategy; and

imposing limitation on pressure of the hydraulic pressure when such excess pressure is signaled.

18. A method as set forth in Claim 17 selectively rendering the brake control pressure strategy active for enabling braking of the engine and inactive for disabling braking of the engine, and when the brake control pressure strategy is rendered inactive after having been active, causing pressure of the hydraulic fluid to be set by a function in the brake control pressure strategy instead of by the fuel injection control strategy.

19. A method as set forth in Claim 18 comprising selecting as a data value for pressure of the hydraulic fluid, the smaller of: a data value for injection control pressure set by the fuel injection control strategy, and a data value for injection control pressure set by the brake control pressure strategy.